1   39773/PBH/B600

CLAIMS:

5   1.   A method of compensating for carrier frequency and
phase errors of a received multi-carrier modulated signal, the
received multi-carrier signal including modulated carriers for
transmitting known data and unmodulated carriers for error
correction, comprising:

10   time domain down converting the received multi-carrier
signal to base-band to provide a down-converted signal, the down-
converted signal including a plurality of modulated carriers for
transmitting known data and unmodulated carriers for error
correction;

15   sampling an unmodulated carrier of the down-converted signal
to provide received data samples;

           providing a reference signal derived from the unmodulated
carrier of the down-converted signal; and

           estimating phase errors from a phase difference between the

20   ummodulated carrier and the reference signal derived from the
unmodulated carrier of the down-converted signal to provide a
plurality of received sample phase error estimates for each
modulated carrier.

25   2.   A method of compensating for carrier frequency and
phase errors of a received multi-carrier modulated signal, the
received multi-carrier signal including modulated carriers for
transmitting known data and unmodulated carriers for error
correction, comprising:

30   time domain down converting the received multi-carrier
signal to base-band to provide a down-converted signal, the down-
converted signal including a plurality of modulated carriers for
transmitting known data and unmodulated carriers for error
correction;

35

sampling an unmodulated carrier of the down-converted signal to provide received data samples;

5   providing a reference signal derived from the unmodulated carrier of the down-converted signal;

estimating phase errors from a phase difference between the ummodulated carrier and the reference signal derived from the unmodulated carrier of the down-converted signal to provide a

10   plurality of received sample phase error estimates for each modulated carrier;

coherently adding each of the plurality of received sample phase error estimates to one of the plurality of modulated carriers for transmitting known data to provide a compensated

15   down-converted signal; and

frequency domain converting the compensated down-converted signal suitable for DSP signal processing.

20   add
        a₂